REMARKS

Reconsideration of this application and the rejection of claims 1-3, 6-12 and 21-23 is respectfully requested. Applicants have attempted to address every objection and ground for rejection in the Office Action dated December 21, 2005 (Paper No. 10122005), and believe the application is now in condition for allowance. The claims have been rewritten to more clearly describe the present invention.

Claims 13-20 stand rejected under 35 U.S.C. § 112 ¶2 because certain features lack antecedent basis in the claims as currently written. Claims 13 and 14 have been cancelled, the corresponding features have been incorporated into independent claim 1, and the dependencies of claim 15-20 changed accordingly. Accordingly this rejection is respectfully traversed.

Claims 1-3, 6-12, and 21-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over either Meggiolan (U.S. Patent App. 2002-108,248) or Meggiolan (U.S. Patent App. 2002-109,398) taken in combination with PCT WO 94/16911 to Jones. The Meggiolan applications, which have the same specification, disclose a process of making a bicycle wheel hub through the following steps: applying a number of layers of structural fiber fabric, incorporating plastic material matrix around an expandable core to provide a layered body of predetermined shape and thickness, placing this expandable core with the layers of structural fiber wrapped thereon in the cavity of a mold, heating the mold, and

expanding the core to apply pressure on the outside body outside of the core inside of the mold and then removing the formed body and core from the mold as to create a bicycle hub.

In contrast to the present invention, according to amended claim 1, Meggiolan does not teach the manufacture of a body blank in a first step with substantially uniform thickness. Meggiolan states in Paragraph [0002], that "The hubs in modern bicycle wheels present a complex cylindrical shape, with a central constant diameter section and two bell-shaped end sections with a wider diameter or other, even more complex, shapes." This becomes even more apparent in the Paragraph [0003] of Meggiolan, which references the complications in manufacturing the complex shaped hub bodies with a single part of structural fiber material. Therefore, in all embodiments of Meggiolan, the thickness of the hub body raises from a central portion to the exterior portions. According to Paragraph [0002] of Meggiolan, this increased hub thickness is desirable: "Additionally it is desirable for the hub thickness to progressively increase from the central section to the hub ends, so to ensure the necessary resistance characteristics in all areas of the hub...where the wheel spokes are anchored" at the hub ends. The molds taught by Meggiolan are generally designed to create complex geometric shapes as shown in Figure 22.

WO 94/16911 to Jones discloses a method of making a plastic wheel through injection molding where plastic is injected into a mold around a mandrel, and the mandrel is either liquefiable at a lower temperature than the plastic or dissolves in the presence of

chemicals that do not dissolve the plastic wheels. Once the mandrel is dissolved or melted, a plastic wheel with uniform axial thickness is created. Jones does not teach the use of composites for bicycles or the creation of hubs having substantially uniform thickness and criticizes shortcomings of composite methods at Page 1, line 24 to Page 2, line 7.

Amended claim 1 now provides, among other things, a method for manufacturing a hub, in particular for bicycles and the like, comprising the following steps: providing a winding device comprising at least a first shaping device; applying a predetermined quantity of fibers on said first shaping device; applying at least a first cross-linking agent to at least part of the fibers; inserting said first shaping device into a second shaping device; spatially expanding of said first shaping device including at least said fibers and at least said first cross-linking agent toward said second shaping device, wherein said shaping devices are matched to one another such that an expanded body comprising the fibers and the cross linking agent exhibits a substantially uniform thickness; removing the expanded body from said second shaping device.; using said expanded body as a body blank; providing a third shaping device; depositing a predetermined quantity of fibers on said third shaping device; applying at least a second cross-linking agent to at least part of said second fibers; and inserting said third shaping device into said body blank and bonding at least said second fibers and said cross-linking agent with said body blank.

Independent Claim 21 discloses a method for manufacturing a hub for bicycles and the like, comprising the steps of providing a winding device comprising at least a first shaping device; applying a predetermined quantity of fibers on said first shaping device; applying at least a first cross-linking agent to at least part of the fibers; inserting said first shaping device into a second shaping device; spatially expanding of said first shaping device with at least said fibers and at least said first cross-linking agent toward said second shaping device, wherein said shaping devices are matched to one another such that an expanded body comprising the fibers and the cross-linking agent exhibits substantially uniform thickness; and removing said expanded body from said second shaping device. Independent claim 22 discloses a hub, in particular for bicycles and the like, characterized in that said hub exhibits an external body having a substantially uniform thickness.

As previously noted, Jones represents an unrelated art (injection molding) and therefore its teachings are inapplicable to methods of manufacturing composite hubs (which it teaches away from) and therefore cannot be combined with Meggiolan. Further neither Meggiolan nor Jones teach all steps of the claimed method. In Meggiolan, the composite material is wrapped around a core which is then heated and the core expands the composite hub into a mold. Neither Jones nor Meggiolan, discuss creating an expanded body of composite material, and then using this expanded body as a blank, placing it in a third-shaping part. Finally, the products of Jones and Meggiolan do not have substantial uniform

thickness as claimed by claims 21 and 22, as Meggiolan does not disclose this feature and in Jones the uniformity is limited to the axial thickness of the solid plastic wheel. The combination of Jones and Meggiolan does not disclose the combination currently claimed in claim 1, therefore, the rejection of claims 1-3, 6-12, and 21-23 is respectfully traversed.

Claims 4 and 5 stand rejected under 35 U.S.C. §103(a) based upon the combination of Meggiolan, Jones and either of two Japanese references, Japanese Published Application 57-0982320 or Japanese Published Application 67-220828. Japanese '320 discloses a method of making a hollow bent product, such as a plastic tube, where a rubber tube is initially placed around a rigid mandrel and then the outer-surface of the tube is coated with resin and reinforcing fiber. After the mandrel is removed, the tube with the fiber and resin on its outside is placed into a mold and pressurized air is then blown through the tube to change the shape of the tube to the pattern of the mold.

Japanese '828 discloses a similar method of creating a plastic tube with a particular form or cross-section. The tube is initially created by winding filament impregnated with fiber and resin around the outer mold. Once this mold is pulled off, one end of the cylindrical pipe is blocked and an inner device is inserted into the pipe. The pipe is first heated and then pressurized, spreading it and forcing it to take upon the dimensions and cross-section of the exterior mold, giving the pipe a specific cross-section.

The combination of Meggiolan, Jones, and the Japanese applications do not

disclose all the features recited in claim 1. Again, as with the previous rejection based upon Jones and Meggiolan alone, the step of using the expanded body as a blank with the third shaping device is not disclosed. Accordingly, the rejection of claims 4 and 5 under 35 U.S.C. §103(a) is respectfully traversed.

Claims 13-20 stand rejected under 35 U.S.C. §103(a) based upon the combination of Meggiolan, Jones, and Easton. Easton discloses the method of making a baseball bat or bicycle seat made of a metal fiber composite. The composite sleeve, which is made of carbon fibers and a matrix sheet, is wound upon an expandable mandrel and is then placed into the open end of an aluminum tube. This mandrel is then expanded so that the composite sleeve bonds with the aluminum tube, which is then heated thermally to cure the fibers and to create a metal/fiber composite. The art of creating hybrid metal/fiber composites is itself an unrelated art. Further, the step of taking an expanded body, removing it from the first and second shaping devices, and then using it as a blank in a third-shaping device is not disclosed or suggested by the combination of Meggiolan, Jones, and Easton. Accordingly, therefore this rejection is respectfully traversed.

For all of the foregoing reasons, Applicants submit that this Application is in condition for allowance, which is respectfully requested. The Examiner is invited to contact the undersigned attorney if an interview would expedite prosecution.

Respectfully submitted,

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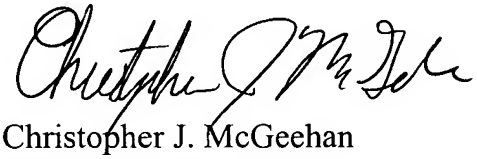

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